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ABSTRACT

Four Introduction to Psychology and six Developmental Psychology graduate teaching assistants collected student ratings from their students with the newly created Evaluation of College Instructor (ECI) rating instrument. A total of 82 Introduction to Psychology students and 186 Developmental Psychology students completed the ECI shortly before the end of the Spring 2001 semester. The data for all Intro and all Developmental sections were combined, and then analyzed separately. Results revealed that a different set of research variables influenced student ratings in the two types of courses. Specifically, whether the class was challenging and whether the students were motivated by the instructor to perform well in the course, were the most (and the only) potent variables for the Introduction to Psychology students. Whether students were motivated by the instructor, and whether students struggled to understand the material influenced the ratings of the Developmental Psychology students. Most interestingly, when six different dimensions of teaching performance were regressed onto the ten research variables, the same predictors emerged as significant predictors of student ratings for those specific dimensions. An appendix contains the ECI rating scale. (Author)

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Running head: EMPIRICAL EXAMINATION

Empirical Examination of Factors That Influence Student Ratings of Instructors

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1

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Abstract

Four Introduction to Psychology and 6 Developmental Psychology Graduate Teaching Assistants collected student ratings from their students with the newly created Evaluation of College Instructor (ECI) rating instrument. A total of 82 Introduction to Psychology students and 186 Developmental Psychology students completed the ECI shortly before the end of the Spring 2001 semester. The data for all Intro and all Developmental sections were combined, and then analyzed separately. Results revealed that a different set of research variables influenced student ratings in the two types of courses. Specifically, whether the class was Challenging and whether the students were Motivated by the Instructor to perform well in the course, were the most (and the only) potent variables for the Introduction to Psychology students. Whether students were Motivated by the Instructor, and whether students Struggled to Understand the material influenced the ratings of the Developmental Psychology students. Most interestingly, when six different dimensions of Teaching Performance were regressed onto the ten research variables, the same predictors emerged as significant predictors of student ratings for those specific dimensions.

Empirical Examination of Factors That Influence Student Ratings of Instructors

It is a common practice for colleges and universities to involve their clients – the students – in the evaluation of their instructors (Bedggood & Pollard, 1999). This practice has been disputed since its beginning, mostly because many believe that it directly threatens the academic freedom instructors are supposed to enjoy (e.g., McKeachie, 1997). Despite these protests, student evaluations of instructors are used for administrative decisions (e.g., promotion, tenure securement, and even termination) concerning those instructors. Therefore, it is of little wonder that student evaluations have received considerable research attention, and that there still is wide disagreement among teachers and researchers alike concerning whether student evaluations should (or even could) be used as an accurate measure of instructor performance.

To make things even more complicated, a host of intervening variables that influence how students rate their instructors exists. Among those variables most often studied by researchers are (a) class standing, (b) expected grade, (c) sex of the student and the instructor, (d) years of experience of the instructor, (e) overall Grade Point Average (GPA), etc. Generally, these variables fall within the categories of student characteristics, course characteristics, and instructor characteristics. The goal of this study was to examine which of the student, course, and instructor characteristics influence students ratings of their instructors.

Student Characteristics

Among the more popular student characteristics studied by previous researchers are class standing, expected grade, overall GPA, and prior subject interest. However, many of the findings contradict one another. For instance, class standing generally is expected to affect student ratings of instructors. Still, in her analysis of a multitude of variables influencing the validity of student

ratings, Langbein (1994) found that upper level students discriminated more, or were more critical, in their evaluations of courses, but not of instructors.

A similar discrepancy exists in findings of the effects of expected grades. On the one hand, Langbein (1994) reported that students who expected higher grades gave higher ratings to their instructors. Because of this and similar findings (e.g., Greenwald & Gillmore, 1997), d'Apollonia and Abrami (1997) some have argued that faculty may purposefully give students higher grades to receive higher evaluations. On the other hand, however, Marsh (1982) determined that the effect of expected grade was explained in part by prior subject interest. Students who indicated interest in the course rated the course higher and indicated that they expected higher grades.

Students with higher GPAs are also thought to better discriminate in their evaluations of teachers and courses, although the exact direction of this relation is not very clear. For example, in Langbein's study (1994), there was a strong negative correlation between GPA and ratings, implying that better students are more disapproving of their courses and instructors, and possibly more discriminating in their judgments. However, Marsh (1982) failed to demonstrate a relation between GPA and overall rating.

One variable that seems to be free of controversy is prior subject interest. Marsh (1982) showed that prior subject interest was a very important moderating variable. Specifically, students who indicated prior interest in the course material rated the course and the instructor higher. Therefore, more interested students perceive teaching as more effective.

Course Characteristics

Many course characteristics have been studied by previous researchers, among which required courses, course size, and high workload—high difficulty courses. Again, many of the findings contradict one another. For instance, although the expectation is that required courses

would be perceived as a burden, and subsequently rated lower than elective courses, this relation could not be demonstrated by Langbein's (1994) study, required versus elective courses were rated in a similar manner. However, Marsh (1982) did show some minor differences between students' ratings of required versus elective courses.

Research has shown that class size is related to student ratings of course quality but not of instructor quality. For instance, Langbein's (1994) research revealed that students in smaller classes provided high ratings but students in larger classes also rated the instructors high, just as students in smaller classes did. In other words, instructional quality was not seen as decreasing as the class size increased, but course quality was (because the ratings for course decreased). However, others have concluded that smaller classes tend to provide better ratings (e.g., Greenwald & Gillmore, 1997; McKeachie, 1997), so the research is unclear.

Although it might seem counter-intuitive, Marsh (1982) reported that courses that were harder and required more time outside of class (i.e., high workload—high difficulty courses) received higher ratings. Indeed in his study, prior subject interest and difficulty level were the two most influential variables in terms of explaining student ratings. This result again seems to confirm that student interest and challenge is of utmost importance.

Instructor Characteristics

Researchers also have examined a variety of instructor characteristics. The two most popular characteristics are experience and sex of the instructor. In terms of experience, Langbein (1994) found that instructor evaluations become more positive during the first 13 years of teaching but that this pattern switches in the mid-teen years of experience when burn-out or age turn student evaluations in a negative direction.

In terms of instructor sex, Langbein (1994) found that female faculty members were treated differently than male faculty members. When a student expected a low grade from a female faculty member, this evaluation was regarded as "nonnurturing" and the female faculty received lower evaluations than her comparable male colleague. Thus, sex was shown to interact with expected grade. Centra and Gaubatz (2000) also examined sex interaction in the classroom. They found that female students consistently awarded higher rating to female instructors, whereas male students rated female instructors lower. However, there were no differences when male and female students rated male instructors.

Present Study

The research literature paints a complicated picture of the factors that affect student ratings of college instructors. Despite the multitude of studies examining the influence of numerous extraneous variables on student ratings, a more comprehensive picture is still to be drawn. The problem seems to be that different variables have been examined in the different studies, whereas researchers need to conduct studies that examine the most influential factors simultaneously.

Therefore, the goal of this research was to determine how eight of the most frequently researched variables influenced students ratings in a large sample of Introductory Psychology and Developmental Psychology students. Specifically, these variables included, from the student characteristics, Class Standing, Expected Grade, GPA, Prior Subject Interest, and Student Sex, and, from the course characteristics, Required versus Elective Course, and Course Difficulty, operationalized here as two distinct variables – Amount of Effort Required and Challenging Course. In addition, two other variables were introduced: students' level of Motivation by Instructor, and whether students Struggled to Understand concepts presented in class. Some of the other frequently examined by researchers variables could not be studied here because of sample limitations. For

instance, all classes were of similar size, all instructors had 1 to 2 years of experience, and all were women.

Thus, these 10 variables served as the Research Variables in the study. It was hypothesized that they would influence the Overall Instructor Rating provided by the students. Further, it was also expected that these research variables might affect some of the dimensions of Teaching Performance (described below), but due to the lack of literature on how these variables might influence the different teaching performance dimensions, exact hypotheses could not be advanced.

Method

Participants

A sample of 72 Introduction to Psychology (INTRO) students (50 women, 28 men), and 183 Developmental Psychology (DEV) students (143 women, 40 men) completed the Evaluation of College Instructor (ECI) rating tool. Of those students who reported their GPA, 40 INTRO students and 68 DEV students reported a GPA of 2.10-3.00, and 35 INTRO students and 113 DEV students reported a GPA of 3.10-4.00. Further, 68 INTRO students and 132 DEV students indicated that the course was required for them to take, whereas 13 INTRO and 16 DEV students indicated that the course was an elective. Among the INTRO students, there were 7 seniors, 11 juniors, 14 sophomores and 50 freshmen, whereas among the DEV students, there were 9 seniors, 25 juniors, 51 sophomores and 98 freshmen. Lastly, in the INTRO sections, 32 students expected an A, 36 expected a B, 11 expected a C and 2 expected a D. In the DEV sections, 97 expected an A, 70 expected a B, 18 expected a C, and no one expected a D for the course.

Procedure

Four INTRO and 6 DEV Graduate Teaching Assistants distributed the Evaluation of College Instructor (ECI) rating instrument to their classes at the end of Spring 2001 semester. Students were

informed that this rating would not be used officially by the school, but were asked to be as honest as they would be on official university instructor evaluation forms. Further, all students were assured of the complete confidentiality of their ratings.

Rating Instrument

The Evaluation of College Instructor (ECI) rating scale was used in this research (Appendix 1). The scale consisted of 5 demographic questions (GPA, expected grade, reason for taking the course, class standing, and sex), 25 Rate-Your-Instructor questions, where students provided ratings on a scale of 1 to 5 (1 = *Never*, 5 = *Always*), and 5 Rate-Yourself questions, where students provided ratings on a scale of 1 to 5 (1 = *Very Low*, 5 = *Very High*).

The 25 Rate-Your-Instructor questions were organized in the following dimensions: Learning/Value (questions 1 - 3), Motivation of Student Learning (questions 4 - 5), Individual Rapport (questions 6 - 8), Organization/Clarity (questions 9 - 15), Examination/Grading Practices (questions 16 - 21), and Presentational Style (questions 22 - 25). The 5 Rate-Yourself questions asked students to rate their interest in taking the course before they enrolled, the amount of effort the course required, the extent to which the course was challenging, the extent to which students were motivated by their instructor, and the extent to which they struggled to understand the material.

The 5 demographic questions and the 5 Rate-Yourself questions were generated after a literature review of variables that influence student ratings. The 25 Rate-Your-Instructor items also were generated after a careful literature review, as well as a review of existing instructor rating scales. Specifically, a pool of 68 items was created, duplicate and near-duplicate items were eliminated, and the 25 final items, grouped within the six dimensions, were produced. This approach to constructing a rating scale, known as content analysis, is consistent with literature

suggestions (e.g., Centra & Gaubatz, 2000; Langbein, 1994; McKeachie, 1997; Sheehan & DuPrey, 1999; Young & Shaw, 1999).

Results

The data were analyzed by class section first (not reported here); then all INTRO and all DEV sections were combined and analyzed together. Results revealed that a different set of research variables influenced the overall instructor ratings in the INTRO sections and in the DEV sections. Further, different variables affected the six dimensions differently in the two types of classes. Thus, the data from the Intro and Developmental sections are presented separately.

Introduction to Psychology Sections

Table 1 shows the correlations between the dependent variable of interest (Overall Rating) and the 10 predictor variables. As evidenced from the table, five out of the ten predictors were significantly correlated with Overall Rating. However, when these predictor variables were entered into a Linear Regression (see Table 2), only Challenging Course and Motivation by Instructor emerged as significant predictors ($\beta = 0.40$, $p = 0.003$; $\beta = 0.49$, $p < 0.001$ respectively). Those two predictors, when controlling for the influence of the other eight, managed to explain 36% of the variance (adjusted R^2). A re-examination of the zero-order correlations reveals that Motivation by Instructor was indeed the most highly correlated variable with Overall Rating. Therefore, when ten different student and course characteristics shown by previous research to influence students' ratings are considered in tandem, how much the instructor motivates his/her students, as well as how much he/she challenges them, appear to be of utmost importance.

Table 2 also shows the beta regression coefficients obtained when the six dimensions of Teaching Performance were regressed onto the ten predictors. Intriguingly, the same two predictors emerged as significant when each of the teaching performance dimensions were regressed on the

predictor variables. Specifically, how much the instructor motivated the students influenced the students' ratings of Learning/Value, Motivation of Students, Organization/Clarity and Presentational Style, and how much the instructor challenged the students influence their ratings on Individual Rapport and Examination/Grading. This combination of predictors managed to explain an average of 26% of the variance in Overall Student Rating. Finally, student GPA also emerged as a significant predictor of Motivation of Students, and how much the students struggled to understand concepts presented in class affected the Examination/Grading dimension.

Developmental Psychology Sections

Table 3 shows the correlations between the dependent variable of interest (Overall Rating) and the 10 predictor variables. As evidenced from the table, six out of the ten predictors were significantly correlated with Overall Rating. However, when these predictor variables were entered into a Linear Regression (see Table 4), only Motivation by Instructor and Struggled to Understand emerged as significant predictors ($\beta = 0.40$, $p < 0.001$; $\beta = -0.19$, $p = 0.10$ respectively). Those two predictors, when controlling for the influence of the other eight, managed to explain 28% of the variance (adjusted R^2). A re-examination of the zero-order correlations reveals that Motivation by Instructor was indeed the most highly correlated variable with Overall Rating. Therefore, when ten different student and course characteristics shown by previous research to influence students' ratings are considered in tandem, how much the instructor motivates his/her students, as well as how much the instructor is able to present concepts so that student do not struggle understanding them, appear to be of utmost importance.

Table 4 also shows the beta regression coefficients obtained when the six dimensions of Teaching Performance were regressed onto the ten predictors. This combination of predictors managed to explain an average of 20% of the variance in Overall Student Rating. It should be noted,

however, that only 7% of the variance in Presentational style was explained by the predictor variables. Intriguingly, how much the instructor Motivated the students influenced all six dimensions of teaching performance. Struggled to Understand influenced Learning/Value and Examination/Grading, Prior Interest in the Course affected Learning/Value, and lastly, Effort Required affected the Learning/Value dimension. Therefore, Motivation by Instructor again proved to be the most influential factor.

Discussion

Introduction to Psychology Cumulative Results

Clearly, the only two variables that influenced overall ratings of instructors were Challenging Course and Motivation by Instructor. Those two predictors, when controlling for the other eight, accounted for a respectable 36% of the variance (adjusted). To see where the difference lied more precisely, two one-way ANOVAs were performed with Overall Rating serving as the DV and Challenging Course and Motivation by Instructor serving as the IVs. The first ANOVA (Overall Rating x Challenging Course) was significant ($F_{(4, 77)} = 6.09$, $p < 0.001$), and a Scheffe comparison revealed that those students who rated the course as Very Highly Challenging ($M = 2.69$, $SD = 1.38$) rated the course significantly lower than students who thought the course was Very Challenging ($M = 4.44$, $SD = 0.33$), Medium Challenging ($M = 4.23$, $SD = 0.43$) and Low Challenging ($M = 3.92$, $SD = 0.86$).

Recall that course difficulty was operationalized as two distinct variables – amount of effort required and challenging course. Also recall that Marsh (1982) concluded that high workload—high difficulty courses are rated higher by students than low difficulty courses. Clearly, then, these results contradict Marsh's conclusions. However, when interpreting this discrepancy, the characteristics of the sample must be taken into consideration. Fifty of the Intro students were

freshmen, whereas only 32 were classified as sophomores, juniors and seniors combined. Thus, considering that the majority of the Intro to Psychology students was freshmen, it is not surprising that Challenging Course was one of the two variables of import. It might be that freshmen are unprepared to deal with the difficulties and the challenges of college life, and that, subsequently, they punish their instructors by awarding them lower ratings. Thus, class standing is probably a modifier in the relationship between how challenging the course is perceived to be and the overall instructor rating. The contentions that Class Standing and Challenging Course are related finds support in Table 1, which shows a significant zero-order correlation between the two variables.

The second variable of import, Motivation by Instructor, clearly was the variable of utmost significance. A one-way ANOVA with this variable used as an IV was of course significant, ($F_{(3, 77)} = 17.30, p < 0.001$), and a Scheffe comparison revealed that students who rated their Motivation by Instructor as Low ($M = 2.98$, $SD = 1.16$) rated the instructor significantly lower than students who rated their Motivation by Instructor as Medium ($M = 4.02$, $SD = 0.41$), High ($M = 4.31$, $SD = 0.39$) and Very High ($M = 4.57$, $SD = 0.25$).

Two issues arising from these results deserve mention. First, the difference between low and high overall ratings lies in whether the students reported their level of motivation by the instructor as low, or as medium, high and very high. In other words, as long as students were at least somewhat motivated by their instructors to do well in the course, they awarded higher ratings. Second, this variable is of high interest itself. Student motivation has been repeatedly studied by researchers, and has repeatedly been reported to be an important determinant of student rating (e.g., Marsh, 1982). However, students' level of motivation by instructor has not enjoyed much research attention, with the exception of Young and Shaw's (1999) article where ineffective teachers were viewed as those who did not motivate their students to learn and where motivating students to do

their best was the fifth (out of six) variables that accounted for 87% of the variability in Young and Shaw's criterion of teaching effectiveness. Still, in the present study, this variable is the most potent of all. What must be asked, then, is what exactly does "motivation by instructor" mean. Maybe this variable taps into rapport with instructor, that is, if students feel they are getting personalized attention and encouragement, then they feel their instructor is trying to motivate them, or help them, do better in the course. Clearly, this finding alone pleas for further research.

Developmental Psychology Cumulative Results

Here, two variables were of interest again –the familiar Motivation by Instructor, along with Struggled to Understand (concepts presented in class). As with the INTRO data, two one-way ANOVAs were performed in order to reveal which groups of students rated instructors lower or higher on their teaching performance. When Struggled to Understand (concepts presented in class) was used as the IV (and Overall Rating – as the DV), the F-test was significant ($F_{(4, 181)} = 4.69$, $p = 0.001$), and Scheffe's comparison revealed that those students who reported their level of Struggled to Understand as Very Low ($M = 4.51$, $SD = 0.33$) rated the instructor significantly higher than students whose level on this variable was Low ($M = 4.21$, $SD = 0.38$), Medium ($M = 4.21$, $SD = 0.48$), High ($M = 4.14$, $SD = 0.57$) and Very High ($M = 4.14$, $SD = 0.43$).

Considering that Developmental is a more specialized class than Intro, one likely interpretation of this finding might be that students view the subject more seriously and strive to understand the material. Consequently, they are disappointed in the instructor when that material is not made easy for them to understand. As a result, they lower their ratings of their instructors' teaching performance. Interestingly, class standing does not seem to be responsible for this result because freshman students were in the majority in this dataset as well. This is also confirmed by the

lack of a significant zero-order correlation between Class Standing and Struggled to Understand in Table 3.

Motivation by Instructor came in as the most potent variable in this sample as well. A one-way ANOVA yielded significance ($F_{(3, 182)} = 20.25, p < 0.001$), and Scheffe's post hoc test revealed that students who rated their Motivation By Instructor as Low ($M = 3.95$, $SD = 0.61$) and Medium ($M = 3.98$, $SD = 0.38$) gave the instructors ratings significantly lower from the ratings of students who rated their Motivation by Instructor as High ($M = 4.32$, $SD = 0.39$) and Very High ($M = 4.61$, $SD = 0.29$).

An interesting difference in how this variable affected Overall Instructor Rating between the INTRO and the DEV sections emerged. In the INTRO sections, as long as students were at least somewhat (i.e., Medium and higher) motivated by their instructors, their overall ratings were high. Only the students who reported their level of Motivation by Instructor as Low did not give high ratings. However, in the DEV sections, students had to be Highly or Very Highly motivated by their instructors in order to give high ratings. Being motivated at a Medium level was not good enough, not to even mention Low levels of Motivation by Instructor. What this probably tells us is that Developmental students tend to be more demanding of their instructors than Intro students. The unanswered question then is, Why is Motivation even more important in this data set considering that the majority of the students in both groups were freshmen. More importantly, however, what truly stands behind "Motivation by Instructor" needs to be investigated further.

Dimensions of Teaching Effectiveness Results

One of the more important contributions of the present study is that it not only examined the influence of a combination of variables on overall instructor rating, but also on different dimensions which have been said to make up teaching performance (often referred to in the literature as

"teaching effectiveness"). A finding consistent with the major results from the analyses where Overall Rating was the DV, is that the same predictors still held in the analyses where the teaching performance dimensions were the DVs. Arguably, however, the more interesting finding in terms of what affects the dimensions of teaching performance, is that there was no uniformity between the two data sets – what predicted some of the dimensions in the Intro data did not necessarily predict the dimensions in the Developmental data. Further, the Developmental data seemed to be more susceptible to influences than the Intro data. This possibly indicates that a different set of dynamics is at work in Intro to Psychology and in Developmental Psychology, which, consequently, means that student ratings in Intro classes should not be treated the same as student ratings in Developmental classes.

Taking this argument one step further, it might even be held that different classes, regardless of whether they belong to the same or to a different discipline, should be evaluated with rating scales specifically tailored to the classes. For again, what seems to be important to Intro students does not necessarily seem to be important to Developmental students and vice versa. In other words, as Bedggood and Pollard (1999) stated in their article, and this research lends further support to their argument, is that "a standard evaluation form will not be appropriate for all subjects, for all courses, or for all fields of study" (p. 134).

Limitations and conclusions

The present study utilized a newly-created Instructor Rating Scale. Although all of the items on the rating scale were incorporated from the literature and from existing scales, the ECI itself has not been validated. Further, it is possible that students may not have taken the task of rating their instructors seriously because they were informed that their ratings will not be used for

administrative purposes. However, there were absolutely no indications that this might have been the case.

These possibilities notwithstanding, three points of import must be made here. First, Motivation by Instructor was the only variable that affected both the Intro and the Developmental overall instructor ratings. Further, it accounted for big portions of the variance in overall instructor rating in both samples. Thus, it is somewhat puzzling that this variable has not been studied by researchers more. Understanding what being motivated by one's instructor truly means is important, because this could help teachers improve their quality of teaching, and their ratings.

Second, it is also interesting to point out that the other two variables affecting Overall Instructor Rating differed for the Intro and the Developmental classes. The only logical explanation of this might be that the dynamics of the two classes are simply too different, and that therefore teacher effectiveness may constitute different things in the eyes of the Intro students and in the eyes of the Developmental students. This raises a bigger problem, however. Could this not mean that student ratings would be influenced by different variables in every single course. In general, Intro and Developmental are not considered to be widely different – both are from the Psychology curriculum, both are taken mostly in the freshman or sophomore years, and, in the present sample, both are taught by female GTAs with one-to-two years of experience. Therefore, how can we be sure that studies that summarize student ratings among various courses, and even among various disciplines, actually report the true state of affairs? In this respect, the present study raises more and newer questions that need to be answered before we could confidently state that we understand what stands behind student ratings.

Lastly, a third point that must be commented on, is that many of the variables examined in previous studies, failed to affect Overall Instructor Rating in this study. However, some of those

variables affected some of the six different dimensions. This raises yet another question: should we be satisfied with knowing what affects overall instructor ratings, and ignore what affects the different components of teaching performance? Should we also not know what affects students' perceptions of Individual Rapport, or of Grading Practices, or of Learning, to name just a few? It might be time to look more into the details, and less into the overall picture, in order to truly understand what affects teaching performance and its components.

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Table 1

Means, Standard Deviations and Correlations between the study variables for the INTRO data

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11
Overall rating (1)	4.17	0.57	—										
GPA (2)	3.43	.55	.25*	—									
Expected Grade (3)	4.20	.81	.21*	.60**	—								
Reason (4)	.84	.37	-.03	-.13	-.14	—							
Class Standing (5)	1.69	1.00	.01	-.04	.01	.20*	—						
Sex (6)	.36	.48	-.16	.03	-.08	-.04	.21*	—					
Prior Interest (7)	3.01	1.06	.20*	.17	.19	-.19	-.18	-.19	—				
Effort Required (8)	3.33	.82	-.12	-.33**	-.41**	-.04	-.15	-.25*	.16	—			
Challenging (9)	3.01	.75	.23*	-.33**	-.40**	.03	-.25*	-.21*	.07	.43**	—		
Motivated (10)	3.71	.81	.53**	-.02	.11	.02	-.17	-.33**	.36**	.16	.27*	—	
Struggled (11)	2.40	.93	-.12	-.31**	-.36**	.26*	-.10	-.14	-.11	.35**	.52**	.05	—

Note. Correlations between these variables and the individual teaching performance dimensions are not shown.

Variable coding scheme is provided in Appendix 1. All tests are two-tailed.

* $p < 0.05$; ** $p < 0.01$

Table 2

Regression of Overall Rating and the Six Teaching Performance Dimensions on the Research Variables for the INTRO data

Predictors	Overall Rating	D1	D2	D3	D4	D5	D6
GPA	.23	.17	.28*	.15	.14	.23	.18
Expected Grade	.03	.21	.13	.11	.02	-.04	-.13
Reason	-.01	.05	.03	-.08	.02	-.02	-.03
Class Standing	.16	-.02	.05	.15	.14	.22	.14
Sex	-.03	.04	.03	.01	-.03	-.02	-.03
Prior Interest	-.02	.02	-.01	.03	-.04	-.01	-.05
Effort Required	-.18	.06	.10	-.22	-.24	-.16	-.22
Challenging	.40**	.21	.08	.55**	.34*	.46**	.19
Motivated	.49**	.49**	.58**	.10	.43**	.31*	.50**
Struggled	-.20	-.08	.13	-.25	-.16	-.28*	-.09
F value	5.09*	4.54*	5.58*	2.44	3.14*	2.97*	2.66
R^2	0.45	0.42	0.47	0.28	0.34	0.32	0.30
R^2_{adj}	0.36	0.33	0.39	0.17	0.23	0.22	0.19
df	(10, 62)	(10, 62)	(10, 62)	(10, 62)	(10, 62)	(10, 62)	(10, 62)

Note. D1 = Learning/Value; D2 = Motivation of students, D3 = Individual rapport, D4 = Organization/Clarity, D5 = Examination/Grading, D6 = Presentational style. Cell entries are standardized confidents. All significance tests are two-tailed.

* $p < 0.05$; ** $p < 0.01$

Table 3

Means, Standard Deviations, and Correlations between the study variables for the DEV data

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11
Overall rating (1)	4.26	.44	—										
GPA (2)	3.59	.54	.08	—									
Expected Grade (3)	4.43	.66	.21**	.49**	—								
Reason (4)	.88	.33	-.05	.11	-.02	—							
Class Standing (5)	1.70	.88	-.02	-.05	.03	-.19**	—						
Sex (6)	.22	.41	-.18**	.03	-.08	.003	.23**	—					
Prior Interest (7)	3.39	.90	.21**	.02	.19*	-.17*	-.02	-.19**	—				
Effort Required (8)	3.47	.64	.18**	.02	-.01	.08	.04	.06	.09	—			
Challenging (9)	3.26	.70	.07	.02	-.12*	-.03	.05	.10	.03	.65**	—		
Motivated (10)	3.83	.76	.50**	.13*	.22**	.004	-.03	-.15*	.12*	.26**	.21**	—	
Struggled (11)	2.28	.94	-.26**	-.22**	-.30**	-.06	.08	.11	-.09	.27**	.38**	-.18**	—

Note. Correlations between these variables and the individual dimensions are not shown. All tests are two-tailed.

* $p < 0.05$; ** $p < 0.01$

Table 4

Regression of Overall Rating and the Six Teaching Performance Dimensions on the Research Variables for the DEV data

Predictors	Overall Rating	D1	D2	D3	D4	D5	D6
GPA	-.04	-.14	-.03	.07	-.04	-.01	-.04
Expected Grade	.06	.05	-.02	.003	.15	-.01	.06
Reason	-.06	-.02	-.09	-.02	-.04	-.05	-.06
Class Standing	.01	-.01	-.03	-.09	.02	.05	.07
Sex	-.09	-.09	-.04	-.12	-.09	-.08	.02
Prior Interest	.09	.15*	.03	.009	.12	.06	.05
Effort Required	.15	.19*	.09	.08	.15	.12	.07
Challenging	-.03	.03	.07	-.15	-.03	-.07	.06
Motivated	.40**	.35**	.58**	.32**	.24**	.29**	.24**
Struggled	-.19*	-.18*	-.02	-.12	-.13	-.26**	-.12
F value	7.98**	7.66**	11.99**	4.49**	4.47	4.74**	2.39*
R^2	0.32	0.31	0.41	0.21	0.21	0.22	0.12
R^2_{adj}	0.28	0.27	0.38	0.16	0.16	0.17	0.07
df	(10, 170)	(10, 170)	(10, 170)	(10,170)	(10, 170)	(10, 170)	(10, 170)

Note. Dimension 1 = Learning/Value; Dimension 2 = Motivation of students, Dimension 3 = Individual rapport, Dimension 4 = Organization/Clarity, Dimension 5 = Examination/Grading, Dimension 6 = Presentational style

Cell entries are standardized confidents. All significance tests are two-tailed.

* $p < 0.05$; ** $p < 0.01$

Appendix 1

The Evaluation of College Instructor rating scale

Section 1 – Demographic Information

1. What is your Grade Point Average?

   0.00-1.00 (1) 1.10-2.00 (2) 2.10-3.00 (3) 3.10-4.00 (4)

   NA (0)

2. What grade do you expect to receive from this course?

   F (1) D (2) C (3) B (4) A (5)

3. Which of the following best describes your reasons for taking this course?

   Required (1) Elective or Other (0)

4. Which best describes your class standing?

   Freshman (1) Sophomore (2) Junior (3) Senior (4)

   Graduate (5)

5. What is your sex?

   Male (1) Female (0)

Section 2 – Rate you Instructor

Please indicate how often your instructor…

1. increased your appreciate for the course material
2. improved your understanding of concepts in the field
3. achieved the course outcomes as stated in the syllabus
4. encouraged students to engage in self-initiated learning
5. motivated you to do high quality work

6. was accessible for help outside of class
7. was condescending (i.e., talked down) to students (Reverse Scored)
8. showed concern for student learning
9. was well prepared for class
10. presented lectures that were well-organized
11. presented lectures that were relevant
12. provided vague answers to students' questions (Reversed Scored)
13. maintained control of the classroom
14. used examples effectively to explain concepts
15. used a wide variety of teaching aids
16. assigned reading materials that were appropriate for the course (i.e., textbooks, articles, etc.)
17. did not explain standards of excellent performance and poor performance on tests and papers (Reversed Scored)
18. graded assignments, papers, tests, etc. inconsistently (Reversed Scored)
19. provided adequate feedback on assignments and exams
20. designed assignment procedures (tests, papers, etc.) which allowed me to demonstrate what I had learned
21. presented material in a reasonable pace
22. stayed on task well
23. spoke at an appropriate speed for note-taking and questions
24. used clear verbal communication

Never (1) Seldom (2) Sometimes (3) Often (4) Always (5) NA (6)

Section 3 – Rate Yourself

Please rate yourself on…

1. your interest in taking this course before you enrolled
2. the amount of effort this course required
3. the extent to which you considered this a challenging course
4. the extent to which you were motivated by the instructor to do high quality work
5. the extent to which you struggled to understand the concepts that were presented in class

Very Low (1) Low (2) Medium (3) High (4)

Very High (5)

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